



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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DALLAS TX 75202-2733

JUN - 9 2015

Mr. Bill Matthews
Director, Environmental Policy and Planning
Cleco Corporation
2030 Donahue Ferry Road
P. O. Box 5000
Pineville, LA 71361-5000

RE: Cleco's Questions/Comments Regarding Information Received in Recent Conference Call and Letter

Dear Mr. Matthews:

This letter is in response to your letter received June 2, 2015, to the U. S. Environmental Protection Agency. In your letter, you asked several questions that stemmed from the information request letter sent from EPA to Cleco on May 19, 2015, and from information discussed during the May 18, 2015, stakeholders' conference call. We appreciate you raising these questions to the EPA for resolution before continuing to work on your BART modeling. For expediency, we have included your questions and added an EPA response as an enclosure. In general, we support the approach to skip initial screening modeling and move on to refined screening modeling to save time and effort but you should continue to coordinate with the LDEQ.

Please contact me at (214)665-7242 or Erik Snyder of my staff at (214) 665-7305 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Guy R. Donaldson".

Guy R. Donaldson
Chief
Air Planning Section

Enclosure

cc: Vivian Aucoin
Louisiana Department of Environmental Quality

EPA RESPONSES TO CLECO QUESTIONS

Question 1: The letter mentions Rodemacher Power Station/Brame Energy and Teche Power Station. We request that EPA reconsider their inclusion of Teche Power Station. Late last year, Ms. Venetta Hayes at LDEQ informed us that Teche Power Station would not need to undergo modeling to show insignificant visibility impacts as its baseline emissions (PM + SO₂ + NO_x) divided by the distance to Breton was less than 0.0898 (the ratio established by LDEQ's modeling of Big Cajun II).

Response: *We do not concur that Teche Power station can be screened out using previous modeling of impacts from Big Cajun II PM emissions. Two factors exist that make the ratio established by LDEQ's modeling of Big Cajun II unusable for the current round of analysis. First, this modeling was completed in 2007 with earlier versions of the CALPUFF modeling system (CALPUFF, POSTUTIL, and CALPOST) and modeling that is being performed now has to be completed with the current regulatory version of CALPUFF including the use of Method 8 instead of Method 6. The second issue is LDEQ's previous Q/D ratio was based on PM₁₀/fine impacts only. This was appropriate when the State had BART coverage under the CAIR is better than BART rule. With the issuance of CSAPR, however, the State must address BART for SO₂. As a result, the modeling must include SO₂ and NO_x emissions to appropriately address the impacts of these pollutants. SO_x and NO_x do not have the same light extinction and dv impact as PM. For example If you have 1 µg/m³ at Breton of PM₁₀/fine, it will give you one value for the dv impairment and a similar 1 µg/m³ of SO_x or NO_x will give you different values that would be much greater than the impact from the 1 µg/m³ of PM₁₀/fine. See the attached Method 8 formula and dv formulas at the end of this document to see the constant and variable coefficients that are applied to concentrations of these sulfate and nitrate pollutants and will result in much higher extinction and dv impacts than for same concentration values of PM₁₀/fine. CALPUFF also includes some chemistry for NO_x and SO_x that also impacts the concentrations and resulting light extinction and dv impacts. Therefore it is not appropriate to use a Q/D based on PM₁₀/fine emission only for screening of a source with NO_x, SO_x, and PM₁₀/fine that has to be currently evaluated.*

Based on discussions with LDEQ, they are investigating if more recent modeling performed for Sid Richardson could be potentially used in a model plant approach to exempt Teche from a full BART analysis. Initial information shows some differences in stack height and parameters that may result in Sid Richardson not being appropriate as a model plant for Teche. We will continue to work with LDEQ and evaluate this option but it may not work and modeling of Teche Power Station may be necessary.

Question 2: It should also be pointed out that the baseline emission rates (specifically the maximum-day tons/day for SO₂ and NO_x) in the Louisiana SIP appear to have been overstated for Teche III. The maximum daily rates listed in the SIP were 11.27 tons/day for NO_x and 7.44 tons/day for SO₂. These values were submitted by Cleco to LDEQ in a 2006 survey. A review of data for Teche III from CAMD reveals the highest daily emission rates in the 2001-2003 time period were actually 10.745 tons/day for NO_x and 6.836 tons/day for SO₂ which suggests the 2006 data submittal by Cleco was in error. When the emissions to distance ratio (244.5 km distance from Teche to Breton Sound) is calculated, using these two rates from CAMD and the

PM rate listed in the SIP, 1.73 tons/day, the resulting emissions/distance ratio is found to be 0.0789 which is below the 0.098 ratio/significant impact trigger established by LDEQ. This further confirms that Teche III does not have a significant impact based upon the evaluation system established in the LDEQ SIP.

Response: *The emission rates for Teche that were included in Table 9-3 from the 2008 Louisiana RH SIP submittal were based on survey responses provided by the company as part of the original SIP. From past work and previous materials we have evaluated, the survey was populated by facilities in accordance with the 2005 BART rule and typically looked at 2000-2004 CAMD data. The BART rule discussed using the most recent 5 year period of actual emissions and also talked about representativeness. We did a pull of CAMD data for 2000-2004 for Teche III and the values are close to the values from the surveys and included in the SIP Table 9-3. CAMD 2000-2004 data indicates a maximum 24-hour actual emission rate of 7.456 tpd of SO₂ and 11.191 tpd of NO_x, which is very close to the values in the existing SIP of 7.44 tpd of SO₂ and 11.27 tpd of NO_x. Considering the SIP data and five year CAMD data are very close and seem to be representative, were submitted by the company, and were included in LDEQ's 2008 RH SIP focusing on a shorter period of three years of CAMD data does not seem to provide sufficient evidence that the current SIP Table 9-3 values are not representative of maximum actuals. Therefore we do not concur with the request to revise the maximum 24-hour emission rates for modeling of baseline levels.*

As discussed in Response to Question #1, we are not concurring with the current assessment using Q/D of PM-10/fine emissions divided by distance to Breton and conclusion that Teche is screened out from BART applicability. Future analysis with either a model plant or any CALPUFF modeling should use rates from Table 9-3 as discussed above.

Question 3: We plan to utilize the refined meteorological dataset that was used in the recent Arkansas BART work and that has been fully vetted by EPA. A plot showing this dataset's domain, standard 50-km buffer, the two Class I areas, and Cleco's site is provided below (*graphic omitted*). We request EPA's approval to use this dataset.

Response: *We concur with Cleco's request to use the refined CALMET dataset that includes observations that we have used recently in our Arkansas Regional Haze SIP/FIP proposal. Please ensure your CALPUFF modeling utilizes the full CALMET domain. Location of Teche was not included, but if refined modeling is conducted for BART or exemption from BART, EPA concurs with the use of our CALMET dataset.*

Question 4: Because we have decided to use refined met. Data for the screening modeling, we request agreement to forego any additional work on what the letter refers to as *initial* screening modeling. This will allow us to focus all efforts on completing the *refined* screening modeling and report. As a result, it is expected that such work can be completed prior to the July 31, 2015 deadline.

Response: *We concur with your request to move to forego any additional initial screening modeling with the CENRAP CALMET NO-OBS dataset and focus efforts on refined modeling using EPA's CALMET with OBS dataset. This concurrence is for Cleco Rodemacher/Brame*

Energy and the Teche facility if modeling is needed for Teche (see responses to Questions #1 and #2).

Question 5: We are concerned about the change in deadline – from December 31 to October 31, 2015 – for the five-factor analysis (if applicable). Significant resources have been expended over the last two months with the goal of meeting the original deadline. A significant amount of those resources have to now be reinvested (certain tasks have to be restarted) because of some of the information gained recently during the call and in the letter. In fact, the initial screening modeling that was due last month would have to be redone, if EPA doesn't agree to forego that step (see #4 above), because it does not conform to the instructions of the letter in at least one area (e.g., CALPUFF version).

Response: *We appreciate your concern regarding the deadline, and hope that by focusing resources towards the refined screening modeling, Cleco will be able to meet the October 31, 2015 deadline.*

Question 6: NO_x and SO₂ controls have been installed on Rodemacher Power Station/Brame Energy Center since the 2001-2003 time period. In the most recent call, you mentioned that controls installed since the baseline period can be considered in the five-factor analysis. Presumably this would be done by establishing a base case emissions profile from which additional controls would be evaluated. Our question is: what protocol should be followed to establish the base case emissions profile? In the case of the SO₂ control at Rodemacher II, we will only have a few months of actual emissions data from which we can establish an expected emission rate, and the control device has not yet been permitted.

Response: *We will need more specific information to answer your question on both the NO_x and SO_x controls and how to establish appropriate emission rates to model as an interim baseline for any evaluation of additional BART controls benefits. This is not exhaustive, but among the details we would likely need are: when control devices came on line, permit allowable (or other enforceable limits) and compliance periods (in the case of SO₂ – expected permit limits and compliance periods) We would like to have a more detailed discussion with Cleco regarding the controls that have been installed on Rodemacher Power Station/Brame Energy Center since the 2001-2003 time period. We invite you to contact Jennifer Huser at 214-665-7347, or by email at huser.jennifer@epa.gov, to set up a time at your convenience to discuss these controls and your question.*

Question 7: Enclosure 3 of the letter states: "...conduct and provide an analysis of emission control alternatives for each BART-eligible source for SO₂ and PM pollutants pursuant to the BART guidelines..." This seems to say that we leave NO_x out of the five factor analysis. However, further down the page, the letter states: "Emission limits for SCR retrofits should be assumed to minimally correspond to 98% control with a floor of 0.05 lbs/mmBtu..." this statement presumes that NO_x is included in the five-factor analysis. Please clarify.

Response: *We appreciate your request to clarify our position on the inclusion of NO_x in the*

five-factor analysis. Based on the current status of the Cross State Air Pollution Rule (CSAPR) Cleco's facilities currently have BART coverage for NOx emissions and a review of NOx controls is not necessary. However, we note there are ongoing legal challenges to the CSAPR rule that, depending on future court decisions, could result in loss of the BART coverage for NOx. If that occurs a BART five-factor analysis for NOx controls would be needed for Cleco's facilities that are not exempted from BART based on modeled impacts. Depending on timing of such a court decision, LDEQ and EPA may need a NOx BART analysis in a short timeframe. We will continue to monitor this issue and provide updates on this issue as needed.

METHOD 8 AND delta dV formulas:

The revised IMPROVE equation (Method 8) is used to convert measured or modeled concentrations into extinction for each pollutant chemical species, and then total them up, accounting for the effect of relative humidity.

Revised IMPROVE equation:

$$\begin{aligned} b_{\text{ext}} = & 2.2 * f_s(RH) * [\text{small sulfate}] + 4.8 * f_L(RH) * [\text{large sulfate}] \\ & + 2.4 * f_s(RH) * [\text{small nitrate}] + 5.1 * f_L(RH) * [\text{large nitrate}] \\ & + 2.8 * [\text{small organic mass}] + 6.1 * [\text{large organic mass}] \\ & + 10 * [\text{elemental carbon}] \\ & + 1 * [\text{fine soil}] \\ & + 1.7 * f_{ss}(RH) * [\text{sea salt}] \\ & + 0.6 * [\text{coarse mass}] \\ & + \text{Rayleigh scattering (site-specific)} \\ & + 0.33 * [\text{NO}_2(\text{ppb})] \end{aligned}$$

Sulfate is assumed to be all “large sulfate” if total sulfate is over 20 µg/m³, otherwise its fraction of the total is assumed to increase uniformly between 0 and 1 when the total is in the range between 0 and 20 (i.e. large sulfate = (total sulfate/20)*total). A similar definition applies for nitrate and for organic mass. The organic mass is assumed to be 1.8 times the organic carbon mass that is measured by IMPROVE monitors, an increase over the old 1.4. Sea salt is estimated as 1.8 * [chloride] (or chlorine if chloride not available). The f_s , f_L , f_{ss} are water growth factors for small (“S”) and large (“L”) fractions of sulfate and nitrate, and for sea salt (“SS”). Their values depend on relative humidity, ranging from 1 at low humidity to over 5 at 95% humidity. Rayleigh scattering is due to the interaction of light with molecules of air itself with no pollutants.

b_{ext} to Deciviews

$$\text{deciviews} = 10 * \ln(b_{\text{ext}} / 10)$$